

The World's Tribute to Pests

By M. Hamilton Talbott.

THE bill of damages which civilization holds against mammal pests foots up into tremendous figures annually, and there is no need in the world much greater than the discovery and universal application of an effectual and speedy method for ridding us of these property-destroying and disease-propagating plagues. According to the experts of the Bureau of Biological Survey, of the Department of Agriculture, Uncle Sam has to pay \$150,000,000 annually for the losses to farm products due to injurious mammals. This is a pretty big board bill.

The omnivorous and eternally hungry rat is the most expensive pest in the national bill, and every rat in the United States costs the citizens at least two cents a day for its keep. And if to this we add the cost of maintaining quarantine operations against it and of fighting the disease spread by it, it brings the cost up to from seven to ten cents a day. And considering the fact that these rodents breed three or four times yearly, with a dozen little ones at a time, and the female begins breeding at three months, it looks as if the future menace of these pests constitutes a very grave problem, especially to the farmer, for from the time he sows his grain he is pursued by them. They begin by eating the seed in the ground, just as an appetizer; as soon as the green stalks begin to appear they are ready for a green salad, and from then they go on and eat the grain in the ear and in the shock; in the stack, the mow, and the crib; they follow it to the granary, the mill, the elevator, and the railway car, and descend into the holds of grain carrying vessels. Mr. Rat even steals it from under the bills and noses of the poultry and live stock in the feed trough; and while visiting here he adds a few hen's eggs, young poultry or pig to his bill of fare. He also eats enormous quantities of vegetables and fruits, and for the more substantial dishes like meats he has a most voracious appetite when he raids the markets, butcher shops and kitchens.

THE farmer is not alone in his loss from these rodents, for the city dweller has to pay a goodly sum annually for their lodging. Secretary Wilson, of the Department of Agriculture, has been endeavoring to ascertain approximately the damage done to property by Mr. Rat in the cities of Washington and Baltimore. In the city he destroys more than is ordinarily imagined. He attacks foundations and walls, floods houses by nibbling through the lead pipes, burns buildings by cutting with his sharp teeth electric light wire insulations and eating matches, and he destroys untold quantities of books and clothing. From data procured Secretary Wilson estimates that the loss from rats in Washington is about \$400,000 a year, and in Baltimore upwards of \$700,000. In the former city one large store lost by these pests from twenty to thirty dollars a night until a system of traps was devised by one of the numerous fraternity of rat catchers, and one hundred and forty were caught in the first twenty nights, after which the losses virtually ceased.

Assuming, as is probable, that similar conditions obtain in all large cities of over 100,000 inhabitants, the damage by rats in these centers of population entails a direct loss of \$20,000,000 annually.

OTHER countries are troubled quite as much as we are and John Bull pays annually a board bill for this rodent of \$70,000,000, according to a recent report of the Society for the Destruction of Vermin, which is a union of scientific organizations working together for the extermination of rats. Its president, Sir James Critchton-Browne, arrives at the annual cost to Great Britain by allowing only one rat per cultivated acre, and assuming that each one does damage to the extent of one farthing per acre, this works out on 40,000,000 acres of land at the figure mentioned. There is an island in the river Humber, in England, which was once covered with rich grass, supporting in good condition all the year round more than three thousand head of cattle, the people who cared for the stock, and the owners who lived by it. But one day, about fifteen years ago, rats swam the half mile of water which separates it from the shore, and now there is not enough verdure on the island to keep a rabbit, and the ground has been so furrowed by these pests that it cannot be reclaimed by cultivation.

In the Azores, West Indies and Cape Verde Islands the rat, which has appeared in recent years, is annually destroying hundreds of thousands of dollars' worth of banana, orange, and coffee plantations.

MODERN science has declared a world-wide war on these rodents, calling them an international peril, not only for their destructiveness, but owing to the fact that they are one of the liveliest and most indefatigable germ carriers, polluting water and infecting dwellings, thereby being the most pernicious agent for disseminating all manner of disease germs, being in this respect comparable to the fly and mosquito. Mr. David E.

Lantz, of the Biological Survey, has made most exhaustive experiments for the extermination of these rodents, and he says that trapping, if vigilantly pursued, is the most effective method of getting rid of them. The improved modern traps with a wire fall released by a baited trigger and driven by a coiled spring are better than any of the old forms of traps, especially when made of metal, for they are then less likely to absorb and retain odors or germs. As bait to be used he finds bacon, sausage, oatmeal, roasted cheese, and sunflower or pumpkin seeds to be the best, and as these pests are very suspicious it is advisable to handle both baits and traps as little as possible.

No one method is adequate, however, and only by concerted, systematic, and persistent effort is it possible to reduce and keep down their numbers. The construction of rat proof buildings is the solution for the future and as the use of cement increases the rat problem decreases, for they cannot penetrate this material when used in floors, walls, drains, barns, etc.

Sir James Critchton-Browne states that the expenditure for rat poison in the United Kingdom amounts to a million and a half dollars annually, but as poisoning is a method nearly always unsatisfactory, and at times unpleasant and unhygienic, this way of destroying them is not recommended by Uncle Sam's experts. A German bacteriologist, Prof. A. Neuman, in his effort to discover a method for their extermination, is experimenting with the unique scheme of inoculating rats with a highly contagious disease. Cultures of microbes are mixed with bread and grain, which when eaten by the rodents causes a disease similar to typhus fever, in a very malignant form. They die in three days after contracting it, and the epidemic spreads among them very rapidly. This disease seems only to affect rodents, for live stock, and even human beings, were not effected when inoculated with it. Such an impression has Prof. Neuman made among scientists in Europe that some of them have had a bill passed in Denmark appropriating \$6,750 a year for further experimenting along this line.

CONSUL Snodgrass of Kobe reports that since Dr. Koch advised the keeping of cats as the best means of destroying rats and preventing the plague the Japanese authorities have been active in investigating the number of cats maintained and their relative value. The results of investigations by the police shows that there are 54,239 cats in Osaka, a city of 1,500,000 people, the families in which cats are kept numbering 48,222. In addition there are 5,636 homeless cats.

Not only is the rat being fought but an active campaign is being carried on against mice, and especially field mice, which are such a menace to the farmer. In Nevada the agricultural sections are being overrun by them and every year they destroy \$300,000 worth of alfalfa. Secretary Wilson told the writer that in Humboldt county last year the mice destroyed 15,000 acres out of a total of 20,000 acres of the forage crop, so that the fields had to be replowed and replanted. In this same section only one-third of the potato crop was gathered and this portion was badly damaged. Orchards and shade trees were much injured by the mice gnawing the bark from the roots and base of the trunks. The Department of Agriculture sent experts out to Nevada for the purpose of showing the ranchmen how to destroy the mice. They used sulphate of strychnine on chopped green alfalfa or alfalfa hay. Even on ranches, where the field mice reached the astonishing total of twenty thousand to an acre they were exterminated at an average cost of seventy cents an acre. The combined efforts of the farmers of the valley were ultimately so successful that they killed forty-five thousand mice a day for several weeks in succession, and the hawks, owls, and other birds and animals, which are appointed by nature to do that work, were able to take care of the remainder and prevent further damage.

OUR western states are also waging war against the prairie dog, which is causing such great damage, for in the state of Texas alone they eat as much grass every year as would feed a million and a half of cattle. There are estimated to be 400,000,000 prairie dogs in Texas, an average of twenty-five to the acre, and 200 dogs will eat as much grass as a steer. Besides this the value of the land is very much injured by the dogs, because they dig up the roots of the grass and destroy it, leaving the ground perfectly bare around their holes. When they have cleaned out all the vegetation in one neighborhood they migrate to another one and continue their work of destruction until entire townships of land have been made barren by their ravages. Texas, Kansas, Colorado, and other western states have been working for years to destroy these dogs by means of poisoned wheat. The legislature of Kansas has appropriated \$100,000 a year for their destruction, and that state is getting free of them.

The "Stuff" You Like to Read.

THERE are at least three things in our national life that are perennially interesting—baseball, the circus and the Fourth of July. All three have a conspicuous place in this issue of our Literary Magazine, and you will certainly miss it if you do not make place in your Fourth of July program for its reading. And then in addition to all these live features, you will find one of the most stirring chapters of "The Nation's Pawn" in this issue also. Not content with removing mysteriously the president-elect from the complicated situation at Washington, Mr. Norton, the author, also removes his rival somehow, some way, from a rapidly moving express train. "The Nation's Pawn" is exceedingly busy in this installment and the mystery of his identity grows deeper and deeper.

BECAUSE the circus has such an abiding place in the interest of the American people, we have arranged with one of the veteran circus men of the country for a series of articles on various phases of circus life. They will deal with inside facts and the writer will tell them as intimately as only a man for twenty years closely associated with the circus can tell them. The Literary Magazine considers itself fortunate in having induced Mr. Willard D. Coxey to prepare these stories. He is known the country over as a press agent and only in the past year severed his active connection with big circuses to become secretary of the Friars' club in New York City, a press agents' club almost as famous as the Lambs' club of the actors. The first of his series of stories in this issue deals with the experiences of a press agent ahead of the show. Others will tell the inside story of big circus wars, give personal recollections of great show men like Barnum, Bailey, Forepaugh, the Ringlings, and others, recall circus fakes that became famous, or explain the real facts about great circus thrillers.

IF all the things that have a hold upon the American people, nothing else grips them so firmly as baseball. We are baseball mad and magazines are following the lead of newspapers in giving their readers endless baseball stories of fact and fiction. Everybody who knows baseball knows "Billy" Sunday, once a star of the diamond, now the sensation of the evangelistic platform; once a fielder, now a preacher. He got a call years ago to quit chasing the elusive "fly" and go to chasing the devil. He has been even more successful in the latter pursuit than in the former and his converts number a hundred thousand or more. In this issue we have an interview with "Billy" Sunday, given while he was in a reminiscent mood. Although he is dead in earnest in his evangelization, he takes time on his rest day to keep himself in complete touch with baseball. Mr. Sunday makes interesting comparisons between baseball, old and new, in which every "fan" will be interested.

GEORGE Fitch puts over a great lot of good fun in his department this week, all of it dealing with the Fourth of July. You ought to read it as soon as the circumstances of your household will permit. Also, you should read William Hamilton Osborne's humorous story on "The Flameless Fourth"—it is especially good in these times of talk of Independence day reform.

WE have a great baseball story for our next issue by Edwin L. Sabin. It's the kind of a story that will stick by you and recall the days of your own boyhood and its corner lot baseball.